

UK COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF KENTUCKY — COLLEGE OF AGRICULTURE

Echinacea

Introduction

Echinacea, also known as purple coneflower, is an herbaceous perennial with large daisy-like flowers. Well-known as a perennial garden flower and cut flower, some species are also prized commercially for their medicinal properties. Echinacea has been used as an immune system stimulant, an anti-inflammatory, and as an aid in healing wounds. While dried roots are most desirable in commercial medicinal preparations, the flowers, leaves, and seeds have also been harvested.



Marketing

Roots and plant material are generally marketed to herbalists, manufacturers, distributors, and pharmaceutical companies. Echinacea is sold in various forms, including teas, ointments, pills, tinctures, creams and powders. Most dealers will not enter into a contract with an inexperienced grower without seeing a sample of what the grower can produce. Buyers may also require laboratory tests for purity. Growers in other states have indicated that it can take up to 10 seasons to secure a contract.

Market Outlook

A rapid increase in the demand for medicinal herbs occurred in the mid- to late-1990s as interest in natural health care

and health products soared. While demand for medicinals has lost some of the momentum of the 1990s boom, it continues to remain strong. Echinacea is reportedly the most widely used medicinal herb in the U.S. Nevertheless, the market for Kentucky-grown cultivated medicinal herbs is highly uncertain at this time, making echinacea production a dubious enterprise.

Production Considerations

General

Growing medicinal herbs generally means the use of organic methods of production. Organic growers must meet all USDA National Organic Program (NOP) requirements. Depending on the expected income from organic sales, growers may also need to be certified by a USDA-approved certifying agency, such as the Kentucky Department of Agriculture. NOP regulations state that the growing site must remain free of prohibited substances (e.g. artificial fertilizers and synthetic pesticides) for a minimum of three years prior to the time of harvest. Growers unable to secure organically produced seed may be permitted to use conventionally produced, untreated seed. However, seedlings for transplants must be raised in approved organic potting soils.

Site selection and planting

Choose a site that has well-drained and moderately rich loam or sandy-loam soil. It is advantageous to grow plants in a soil type that easily washes from the roots. Plantings are most commonly started from seed or



transplants (plugs). Transplanting greenhouse-grown plugs will achieve a more consistent and uniform planting than direct-seeding to the field. A tobacco setter can be used for transplanting echinacea. Some growers prefer setting plants in the fall; however, plants can also be successfully set in May in Kentucky. Harvesting roots is easier when plants are grown in raised beds in the field. Irrigation is recommended for optimal growth.

Pest management

Weeds are the greatest threat to production. Echinacea is a poor competitor with other plants, thus weed control is critical, especially during the first year. Since herbicides are not an option for organic growers, hand hoeing and mulching tend to be the main techniques for weed control. Diseases with the potential to cause serious crop losses include aster yellows and Sclerotinia crown and stem rot.

Harvest and storage

Typically, plants are grown for two to three years when harvesting roots. Roots can be harvested in the fall with a modified potato digger, and then chopped into sections before washing. Dried roots will bring a higher price. Drying can be accomplished by leaving roots in the field to dry naturally or by using an industrial batch drier typically used for tobacco. An acre of echinacea averages 2,500 to 3,000 pounds of dried root after three years of growth.

Labor requirements

Labor needs include approximately 42 hours per acre for planting and 35 hours per acre for washing and drying roots. Hoeing will necessitate well over 160 hours per acre over the three-year growing period. Producers growing their own transplants will have additional labor needs.

Economic Considerations

Echinacea production is a long-term investment in time, energy, and finances. It takes a minimum of two to three years for roots to develop to a

marketable size. Risks include plant establishment failure, an uncertain market, fluctuating prices, and the difficulties associated with organic production practices.

Start-up costs include the purchase of plugs and the labor required for establishment. Equipment needs include a planter, potato digger, washing equipment and drying equipment. The total capital investment can come to as much as \$64,500 for 5 acres. A break-even price between \$3.65 and \$6.57 per pound is necessary according to 1999 Wisconsin figures. The market price of \$40 per pound in 1997 fell to between \$2 and \$12 per pound in 1999. Wisconsin estimates the return to land and management to be between \$3,766 per acre and negative \$1,506 (a net loss), depending on the species grown and the current market.

More Information

- Selected Internet Resources for Herb Marketing (University of Kentucky, 2005) <http://www.uky.edu/Ag/NewCrops/herbmarketing.pdf>
- Commercial Echinacea Production (Alberta Agriculture and Food) *Available for purchase* [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex10531](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex10531)
- Echinacea as a Tobacco Crop Alternative (University of Wisconsin-Madison, 1999) http://www.cias.wisc.edu/archives/2000/01/02/echineacea_as_a_tobacco_crop_alternative/index.php
- Economic Issues with Echinacea, MF-2532 (Kansas State University, 2002) <http://www.oznet.ksu.edu/library/agec2/mf2532.pdf>
- Production Practices for *Echinacea augustifolia* (Agriculture and Agri-Food Canada, 2007) <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1193337467277&lang=e>
- Warm Climate Production Guidelines for Echinacea, ENH-993 (University of Florida) <http://edis.ifas.ufl.edu/pdf/EP/EP24800.pdf>